UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,181	11/26/2003	Tony F. Rodriguez	P0912	5733

23735   7590   06/06/2008
DIGIMARC CORPORATION
9405 SW GEMINI DRIVE
BEAVERTON, OR 97008

EXAMINER
KAU, STEVEN Y

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
06/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 January 2008_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-21_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-21_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _26 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _11/23/2007_.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   This action is responsive to the following communication: an Amendment filed on

September 12, 2007 and January 28, 2008.

Applicant's arguments, "<u>A. Suzukl and Hilton are not prior art to claim 1</u>. Claim 1 has

priority to at least January 20, 1999, based on the claim of priority to 09/234,780 (the '780

application). The '780 application describes embodiments that correspond to the elements of

claim 1 as follows: A method for analyzing an image of a printed object to determine whether

the printed image is a copy or an original (see, e.g., page 2, line 24 to page 3, line 16 of the

'780 application), the method comprising: …..", Page 2, filed on 9/12/2007.

In re, the Examiner disagrees with the conclusion. The examiner noticed that the application

09/234,780 had been abandoned on 10/27/2000 before the instant application (10/723,181)

was filed on 11/26/2003. **35 U.S.C. 120 states that "An application for patent for an**

invention disclosed in the manner provided by the first paragraph of section 112 of this

title in an application previously filed in the United States, ... if filed before the

patenting or abandonment of or termination of proceedings on the first application or

an application similarly entitled to the benefit of the filing date of the first application

and if it contains or is amended to contain a specific reference to the earlier filed

application." Thus, no priority benefits of '780 application can be claim by the instant

application. Further, applicant provided a list dated 1/28/2008, of claims along with priority

information in response to the office request of 11/26/2007. In the list, claim 1 is tied to

provisional **application 60/071,983, filed 1/20/1998 and patented on 10/21/2003**, which is before the instant application was filed (**filing date: 11/26/2003**). Thus, the instant application (10/723,181) is NOT entitled for the priority benefits of '983 application. With respect to claims 5-13, are tied to a provisional application 60/071,983 filed 7/2/2001, which is more than twelve months before the instant application was filed (11//26/2003), therefore, the instant application is NOT entitled for the priority benefits of '983 application (See 35 U.S.C. 119). With respect to claims 14-17 and 19-21, since these claims were filed after the 60/071,983 became patented (10/21/2003), these claims are NOT entitled for the priority benefits from '983 application. With respect to claim 18, it does not entitled for the priority benefits from 09/074,983 for the same reason discussed above.

Applicant's other arguments regarding claim rejections filed on September 12, 2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-4, 14-17 and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Zeller et al (Zeller) (US 7,054,461).

Zeller discloses a method (**e.g. an authentication system and related methods of Fig. 1, col 2, lines 20-65**) for analyzing an image of a printed object to determine whether the printed image is a copy or an original (**e.g. embed an auxiliary information into the image based on its attributes to degrade the responses to a copy operation of printing the object and then determine whether the object is a counterfeit, and the use of additional metrics can improve the ability of a digital watermark reader to detect copies of original images bearing fragile digital watermark, col 2, lines 44-55 & col 4, lines 6-34**), the method comprising: determining whether a machine readable auxiliary signal (**e.g. bar codes, hologram and/or digital watermark**) is embedded in the image (**Fig. 1 discloses a process of detecting a copy by scanning the image, including digital watermark, the print quality processor measures one or more print quality metrics, the digital watermark decoder measures digital watermark metrics and the classifier analyzes all data to determine whether the document is a copy of an original print, col 5, line 56 through col 6, line 19**) wherein the auxiliary signal is embedded at embedding locations (**e.g. watermark at pixel locations**) using a set of two or more print structures (**e.g. black vs white block structure, (col 8, lines 13-16), contrast (col, 7, lines 31-44) and color, (col 10, line 55 through col 11, line 20)**)) that change in response to a copy operation (**e.g. changes to watermark or degradation of it can differentiate between an original and a copy, col 2, lines 4-15**), the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable (**e.g. Zeller discloses changes of attributes, including change of watermark, i.e. degradation, change or degradation of prints, ink or paper, image degradation that creates a blurring effect,**

or divergence effect and therefore less detectable, etc. col 2, lines 4-32 & col 9, lines 30-46); and based on evaluating the machine readable auxiliary signal, determining whether the printed object is a copy or an original (as discussed above, Zeller's system and associate methods determine whether the print object is a copy or an original, col 5, line 56 through col 6, line 45).

Regarding claim 2.

Zeller discloses wherein the set of print structures include a first color (e.g. black color) and a second color (e.g. white color) that change differently in response to a copy operation (e.g. image degradation creates blurring effect, col 2, lines 4-32, col 7, lines 44-67 & col 9, lines 30-46).

Regarding claim 3.

Zeller discloses wherein at least one of the colors corresponds to an ink color (e.g. black color) that is out of gamut of a printer or scanner (e.g. original image is scanned prior to print quality metrics measuring by print quality processor and watermark decoder. Thus the ink color must come out of gamut of a scanner, Fig. 1, col 5, lines 46 through col 6, line 45).

Regarding claim 4.

Zeller discloses wherein a difference in luminance of the two colors changes in response to a copy operation (e.g. image degradation from copy operation produce blurring effect and therefore it must affect luminance, & contrast, etc. col 2, lines 4-32 & col 9, lines 30-46 & col 16, lines 25-42).

Regarding claim 14.

Zeller discloses storage medium on which is stored instructions for performing the

method of claim 1 (e.g. a system memory, such as computer-readable medium, etc. col 23, lines

45-55).

Regarding claim 15.

Zeller discloses a method (**e.g. an authentication system and related methods of Fig.**

1, col 2, lines 20-65) for creating an image to be printed on a printed object, the image being

used to determine whether the printed image is a copy or an original (**e.g. embed an auxiliary**

information into the image based on its attributes to degrade the responses to a copy

operation of printing the object and then determine whether the object is a counterfeit, and

the use of additional metrics can improve the ability of a digital watermark reader to detect

copies of original images bearing fragile digital watermark, col 2, lines 44-55 & col 4, lines

6-34), the method comprising: embedding a machine readable auxiliary signal (**e.g. bar codes,**

hologram and/or digital watermark) in the image (**Fig. 1 discloses a process of detecting a**

copy by scanning the image, including digital watermark, the print quality processor

measures one or more print quality metrics, the digital watermark decoder measures

digital watermark metrics and the classifier analyzes all data to determine whether the

document is a copy of an original print, col 5, line 56 through col 6, line 19), wherein the

auxiliary signal is embedded at embedding locations (**e.g. watermark at pixel locations**) using a

set of two or more print structures (**e.g. black vs white block structure, (col 8, lines 13-16),**

contrast (col, 7, lines 31-44) and color, (col 10, line 55 through col 11, line 20)) that change in

response to a copy operation (**e.g. changes to watermark or degradation of it can**

differentiate between an original and a copy, col 2, lines 4-15), the change causing a

divergence or convergence of a characteristic of the print structures such that the machine

readable signal becomes more or less detectable (**e.g. Zeller discloses changes of attributes,**

including change of watermark, i.e. degradation, change or degradation of prints, ink or

paper, image degradation that creates a blurring effect, or divergence effect and therefore

less detectable, etc. col 2, lines 4-32 & col 9, lines 30-46); and creating a metric to detect the

convergence or divergence from an image scanned of a suspect printed object to determine

whether the suspect printed object is a copy or an original (**e.g. Zeller discloses to create print**

quality metrics to detect watermark degradation due to image scanning and coping

operation; Fig. 1, col 2, lines 56-67).

Regarding claim 16.

Zeller teaches a storage medium on which is stored instructions for performing the

method of claim 15 (e.g. a system memory such as a computer-readable medium, col 23, lines

45-55).

Regarding claim 17.

The structure elements of method claim 1 perform all steps of method claim 17. Thus

claim 17 is rejected under 102(e) for the same reason discussed in the rejection of claim 1.

Regarding claim 19.

The structure elements of method claim 14 perform all steps of method claim 19. Thus

claim 19 is rejected under 102(e) for the same reason discussed in the rejection of claim 14.

Regarding claim 20.

The structure elements of method claim 15 perform all steps of method claim 20. Thus

claim 20 is rejected under 102(e) for the same reason discussed in the rejection of claim 15.

Regarding claim 21.

The structure elements of method claim 16 perform all steps of method claim 21. Thus

claim 21 is rejected under 102(e) for the same reason discussed in the rejection of claim 16.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 5, 11, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Zeller et al (Zeller) (US 7,054,461) as applied to claim 1 above, and in view of Hayashi

el at (Hayashi) (US 2001/0030759).

Regarding claim 5.

Zeller does not explicitly teach the set of print structures include a first print structure

having a first dot gain property and a second print structure having a second dot gain property;

wherein the first print structure is more susceptible to dot gain than the second print structure in

response to a copy operation.

Hayashi discloses an image processing apparatus for determining specific images, in that

he teaches the set of print structures include a first print structure having a first dot gain property

and a second print structure having a second dot gain property (**e.g. ink dot changes,** Figures 46

& 47, Pars. 0242-0245); wherein the first print structure is more susceptible to dot gain than the

second print structure in response to a copy operation (**Figures 46 & 47, Pars. 0242-0245**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified Zeller to include the set of print structures include a first print

structure having a first dot gain property and a second print structure having a second dot gain

property taught by Hayashi to reduce wasted processing time for electronic watermark extraction

processing (Pars. 0010 & 0011).

With regard to claims 11, 12 & 13, Zeller differs from these claims, in that he does not

teach that the evaluating includes evaluating a frequency domain metric to detect changes in the

print structures; the frequency domain metric is a radial frequency domain metric, and the

frequency domain metric is used to evaluate changes in color of a print structure.

Hayashi teaches that the evaluating includes evaluating a frequency domain metric to

detect changes in the print structures (e.g. Hayashi discloses using Fast Fourier Transform and

frequency domain for watermark extraction and evaluation, **Figure 5, Par. 0150-0159**); the

frequency domain metric is a radial frequency domain metric (Fig. 13 & **Par. 0299**), and the

frequency domain metric is used to evaluate changes in color of a print structure (Figures 8A &

8B, Pars. 0451).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified Zeller to include that the evaluating includes evaluating a frequency

domain metric to detect changes in the print structures; the frequency domain metric is a radial

frequency domain metric, and the frequency domain metric is used to evaluate changes in color

of a print structure taught by Hayashi to reduce wasted processing time for electronic watermark

extraction processing (Pars. 0010 & 0011).

6.   Claims 6-10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zeller et al (Zeller) (US 7,054,461) as applied to claims 1 and 17 above, and in view of

Hilton et al (Hilton) (US 2004/0075869).

Regarding claim 6.

Zeller does not explicitly teach a difference in luminance of the print structures changes

in response to a copy operation due to a difference in susceptibility to dot gain of the print

structures.

Hilton teaches that a difference in luminance of the print structures changes in response

to a copy operation due to a difference in susceptibility to dot gain of the print structures {e.g.

light areas of picture can be used as Bitmorphs with a relatively low density of pixels, and heavy

areas can use higher density Bitmorphs} (Par. 0024).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified Zeller to include a difference in luminance of the print structures

changes in response to a copy operation due to a difference in susceptibility to dot gain of the

print structures taught by Hilton to protect against falsification rather than copying and to have a

conventional machine readable method of authentication (Par, 0039).

Regarding claim 7.

Zeller does not explicitly teach the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property; wherein the first print structure aliases differently than the second print structure.

Hilton teaches that the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property (Figures 1-4, Par. 0058); wherein the first print structure aliases differently than the second print structure (Figures 1-4, Par. 0058).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Zeller to include the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claims 8, 9 & 10, Zeller differs from these claims, in that he does not teach that the auxiliary signal is embedded by varying continuity of line structures, wherein one print structure comprises a line segment in a first color, and another print structure comprises a line segment in another color, and the line segments of the different colors are arranged by varying between the first and second colors along a printed line.

Hilton teaches that the auxiliary signal is embedded by varying continuity of line structures (Figures 1-4, Par. 0057 & 58); a line segment in a first color, and another print structure comprises a line segment in another color (Par. 0064 & 0065), and the line segments of the different colors are arranged by varying between the first and second colors along a printed line (Par. 0064 & 0065).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified Zeller to include the auxiliary signal is embedded by varying

continuity of line structures, a line segment in a first color, and another print structure comprises

a line segment in another color taught by Hilton to protect against falsification rather than

copying and to have a conventional machine readable method of authentication (Par, 0039).

Regarding claim 18.

The structure elements of method claim 8 perform all steps of method claim 18. Thus

claim 18 is rejected under 103(a) for the same reason discussed in the rejection of claim 8.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Steven Kau whose telephone number is 571-270-1120 and fax

number is 571-270-2120. The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/S Kau/   /King Y. Poon/
Examiner, Art Unit 2625   Supervisory Patent Examiner, Art Unit
5/28/2008   2625